# THE TOWN OF SANDWICH, MA

## Water Quality Advisory Committee

## Natural Resources Damages Fund, Textron Corporation Settlement

# APPLICATION FOR NRD GRANT MONIES

RFR ID: EEA 09 NRD 01

March 2009

# TOWN OF SANDWICH, MASSACHUSETTS

# NATURAL RESOURCES DAMAGES FUND - TEXTRON SETTLEMENT

# GRANT APPLICATION

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# SECTION 1
# PROJECT NARRATIVE

## 1.1 ABSTRACT

The Town of Sandwich is requesting NRD funding to develop a town-wide Comprehensive Water Resources Management Plan. This plan will not only benefit the Town of Sandwich, but will be an essential component in the on-going regional water resources planning. Sandwich shares watersheds with the surrounding communities of Mashpee, Falmouth, and Barnstable; and will be a vital participant in possible regional wastewater treatment with the towns of Bourne, Falmouth, and Mashpee. Therefore, this plan will be the linchpin in the overall strategy and success for water resources management on Upper Cape Cod.

The Comprehensive Water Resources Management Plan will be developed in phases, each with a strong public consultation component. Phase I will be "Needs Assessment", Phase II will be "Identification, Screening, and Evaluation of Alternatives", Phase III will be "Formulation of Recommended Plan" and Phase IV will be "Completion of MEPA and DRI Reviews".

The Town is requesting the NRD monies to pay for a consultant to help develop the plan. It has been estimated that the final cost for these services will be $600,000. The Town will cover the costs of its own employees' involvement with the plan development. The project is expected to be completed in three years, with Phase I starting in FY10 and finishing in FY11, Phase II and III starting and finishing in FY11, and Phase IV starting and being completed in FY12. To ensure timely and coordinated actions, Sandwich will be working closely with the surrounding communities and the Cape Cod Commission.

## 1.2 SITE DESCRIPTION

The proposed Comprehensive Water Resources Management Plan will affect the entire Town of Sandwich, in addition to the Towns of Mashpee, Falmouth, Barnstable and potentially Bourne as discussed below. Figure 2-1, located in Appendix A, illustrates the project setting.

The Town of Sandwich is the third largest town on Cape Cod in terms of land area, encompassing approximately 44 square miles, or 28,000 acres, with a local population of approximately 23,000 year-round residents. The Town is bounded on the north by the Cape Cod Bay, on the east by the Town of Barnstable, on the south by the towns of Mashpee and Falmouth, and on the west by the Town of Bourne. Approximately 15 square miles (9,600 acres) of the Massachusetts Military Reservation (MMR) also lie within the confines of Sandwich, including the J-Ranges in question and the damage from their contamination.

Of the J-Ranges, it is the J-3 Range that is of interest. It is located on the southeast corner of MMR and is approximately 600 feet wide by 3,200 feet long. Beginning in 1970, this range was used by the Textron Systems Corporation to develop and test tactical weapon systems. In 1997, sampling indicated contamination with various chemicals including perchlorate in both the soil

and groundwater. The associated plume is located at the eastern border of the Massachusetts Military Reservation, within the Town of Sandwich, and is migrating south toward Snake Pond. Estimates of plume size indicate it affects approximately 94 acres.

The scope of Sandwich's proposed Comprehensive Water Resources Management Plan is not limited to only this contaminant plume; instead, it will identify **all** significant threats to groundwater quality and quantity, town-wide, and develop comprehensive strategies for sustainable water resource management. This plan directly addresses the goal of the NRD program to restore natural resources equivalent to those impacted by the release at the J-Range. Indeed, the proposed town-wide approach will position the Town to leverage this money to protect and restore a far greater amount of groundwater than that directly impacted by the plume. In addition, Sandwich shares watersheds with the surrounding down-gradient communities of Mashpee, Falmouth, and Barnstable. These communities are also in various stages of pursuing Comprehensive Water Resources Management Plans of their own. In concert with these communities' plans, Sandwich's plan will be leveraged even further and will directly affect groundwater, surface water bodies, and natural resources in those communities as well.

## 1.3 PROJECT GOALS AND OBJECTIVES

A description follows of the general goals of a Comprehensive Water Resources Management Plan and the specific goals Sandwich intends to achieve. A discussion of how this project directly meets the evaluation criteria of the EEA is also included.

### 1.3.1 General Objectives

Generally speaking, a Comprehensive Water Resources Management Plan is an essential tool to allow the Town to implement the EEA's Massachusetts Water Policy that promotes the following four principles:

- Keep water local, and live within your watershed budget
- Protect clean water and restore impaired waters
- Protect and restore fish and wildlife habitat
- Develop and promote development strategies consistent with sustainable water resource management

The proposed plan will allow the Town to address these principals comprehensively and strategically, rather than haphazardly as random development and growth occur across the community.

### 1.3.2 Specific Objectives

The specific objectives of the Town are to address each of the following challenges:

- **The J-3 Range plume and how it might affect ground water supplies**.
- **Nitrogen loading issues**. The town is currently participating in the Massachusetts Estuaries Program (MEP), with assessments for Scorton Creek and Sandwich Harbor scheduled for completion in 2010. In addition, Sandwich is located in the upper reaches

of six other watersheds shared with other communities, including the watersheds of Popponesset Bay in Mashpee, Three Bays and Barnstable Harbor in Barnstable, Waquoit Bay East and Quashnet River in Mashpee and Falmouth, and Great Green and Bourne Ponds in Falmouth. These neighboring communities are all well underway with their Comprehensive Water Resources Management Plans, and Sandwich now needs to implement its own plan to avoid delaying the neighboring communities and to make sure the decisions made are appropriate for Sandwich's water resources.

- **The 23% increase in population since 1995.** Sandwich currently does not have a public sewer service, and there are approximately 8,100 individual on-site septic systems in Town. Of these, only 16 have enhanced treatment. Given the pressure for growth and development, this sole reliance on on-site septic systems can create environmental and public health issues. Add that to the previously stated nitrogen loading concerns and it is essential that a comprehensive, strategic plan be implemented to deal with wastewater.
- **Protection of the Sandwich Water District's ten groundwater wells, and the private wells that still service approximately 25% of the community.** Given the growth and the number of septic systems in the community, many located within Zone IIs, protection of drinking water supplies from currently recognized, and emerging contaminants, is essential.
- **Protection of freshwater resources**. With the increased growth, development has begun to impact Sandwich's many freshwater ponds. One does not have to look far down Cape Cod to see a number of fresh water ponds that have been adversely affected by the nutrients from septic systems. It is essential that this plan prevent that from happening with Sandwich's ponds, or those in abutting communities.
- **Regional wastewater treatment**. Sandwich has been approached to be a participant in a possible regional wastewater treatment facility with the Towns of Bourne, Falmouth, and Mashpee. However, lacking a Comprehensive Water Resources Management Plan, Sandwich has been unable to develop the strategies and plans for sustainable water resource management that are required to understand how the Town's requirements fit with those of its neighbors.

### 1.3.3 How the Project Meets the Eligibility Criteria

The project meets the eligibility criteria listed in Section 1B and 2B of the RFP as follows:

- The Comprehensive Water Resources Management Plan will result in the restoration and/or preservation of more groundwater resources than have been injured by the release of the perchlorate and other hazardous substances from the J-Ranges.
- The Comprehensive Water Resources Management Plan will in no way limit the ability of EEA to serve Upper Cape Cod. In fact, due to shared watersheds and regionalization, this plan will positively affect all of the Towns of Upper Cape Cod.
- The Comprehensive Water Resources Management Plan will be developed to be consistent with all applicable federal, state, or local laws, regulations and policies.
- The Town of Sandwich is not currently subject to permit or enforcement actions compelling the completion of a Comprehensive Water Resources Management Plan.
- Since the Comprehensive Water Resources Management Plan will be a comprehensive approach to water resources management, it will not interfere with, undo, or be negatively impacted by future remediation work.

- The Plan will focus directly on the groundwater resources and the benefits that accrue to the human and natural systems that rely on it.
- The Comprehensive Water Resources Management Plan will be focused on Sandwich, but will also affect the other communities of Upper Cape Cod and the town of Barnstable
- The Plan will identify all feasible options to protect and restore the **quality** of current and potential drinking water supplies, as well as environmentally sensitive lands and water bodies that depend on high quality groundwater.
- Through its approaches to groundwater recharge and water conservation, the Comprehensive Water Resources Management Plan will protect the **quantity** of current and potential drinking water supplies.
- A primary purpose of a Comprehensive Water Resources Management Plan is to strategically integrate the requirements for water supplies with the requirements for wastewater treatment and disposal into a complete plan. This Comprehensive Water Resources Management Plan will provide multi-community benefits as Sandwich shares watersheds with Falmouth, Mashpee, and Barnstable; and is considering entering into regional treatment solutions with Bourne, Falmouth, and Mashpee.

## 1.4 PROJECT TASKS AND MILESTONES

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The fundamental premise behind this application for funding is the need for a comprehensive approach to the restoration and protection of Sandwich's ground waters. There are many possible ways to replace the resources lost as a result of the Textron activities at the J-Range. It is the Town of Sandwich's view that the best use of the available NRD funds is to prepare a comprehensive plan to protect **all** of the Town's groundwater resources, and then to systematically implement the best groundwater protection measures identified in that plan. The "best" options can only be identified by this approach that:

- looks at a broad range of groundwater protection needs,
- finds all available solutions to those needs, and
- formulates locally-acceptable steps through effective public consultation.

While the Town could quickly nominate a number of potential groundwater protection projects, it instead intends to methodically identify those that make the best overall sense, given current and projected circumstances.

### 1.4.1 Phases and Tasks of the Comprehensive Water Resources Management Plan

Table 1-1 outlines the general steps that will be taken to develop the Comprehensive Water Resources Management Plan. A more detailed listing of the tasks is found in Appendix B.

The plan will be developed in phases, each with a strong public consultation component. Phase I, the Needs Assessment, is perhaps the most important, because it will allow a broad look at all the Town's groundwaters and all the threats to its long-term quality. Mindful of the need to make short-term progress in groundwater protection, the Town has included in Phase I a task to identify and begin to implement the obvious initial steps that need not wait until the completion of the overall plan. Such initial steps might include the development of nitrogen loading

regulation or strengthening of other planning and health programs. The Town also hopes to find ways to leverage private development to provide some mitigation for past groundwater impacts.

**TABLE 1-1**
**PHASES AND PRINCIPAL TASKS**

| Phase | Task (See Appendix B for more detailed task listing) |
|---|---|
| Phase I: Needs Assessment | • Document land use, soil conditions, watersheds and environmentally sensitive areas<br>• Formulate a GIS database for developed properties, including type, water use, and seasonality<br>• Estimate groundwater flow and document existing water quality in each watershed<br>• Identify the number of parcels (and their water use) that impact groundwater such that some action is needed for:<br>o Protection of water supplies (public and private)<br>o Avoidance of sanitary and other public health problems<br>o Protection of surface waters from nutrient enrichment<br>o Accommodation of sustainable economic growth<br>o Mitigation of convenience, aesthetic and economic impacts<br>• Identify short-term actions that can be taken to address the most significant needs<br>• Consult with the public through workshops, hearings and reports |
| Phase II: Identification, Screening, and Evaluation of Alternatives | • Identify all technically feasible options for protecting groundwater, including both structural and non-structural alternatives<br>• Formulate evaluative criteria against which to compare the options<br>• Find the best groundwater protection alternatives that apply to Sandwich<br>• Consult with the public through workshops, hearings and reports<br>• Describe each screened alternative in sufficient detail to fully evaluate its features<br>• Compare the screened alternatives with respect to the following factors:<br>o Capital and O&M costs<br>o Energy Usage<br>o Lag time from implementation to achievement of water quality goals<br>o Impact on environmentally sensitive areas<br>o Impact on community growth<br>o Impact on property taxes<br>o Production of residuals requiring further treatment and disposal<br>• Consult with the public through workshops, hearings and reports |
| Phase III: Formulation of Recommended Plan | • Identify the single alternative or combinations of alternatives that is best for Sandwich<br>• Prepare preliminary designs of structural components<br>• Determine the key features of non-structural components<br>• Prepare estimates of capital and O&M costs and funding requirements<br>• Illustrate likely financial impacts on users and non-users<br>• Formulate an implementation schedule, including permits and approvals<br>• Identify principal environmental impacts and associated mitigating measures<br>• Consult with the public through workshops, hearings and reports |
| Phase IV: MEPA and DRI Reviews | • Prepare Environmental Notification Form and Environmental Impact Reports<br>• File DRI application<br>• Respond to comments |

### 1.4.2 **Proposed Project Schedule**

The proposed project schedule will be as follows, based on Fiscal Years running from July 1 to June 30:

- FY2010 - Begin Phase I
- FY2011 - Complete Phase I, Begin and Complete Phases II, and III
- FY2012 - Begin and Complete Phase IV

### 1.4.3 **How the Project Meets the Evaluation Criteria**

The Town believes that a Comprehensive Water Resources Management Plan will substantially meet all of EEA's selection criteria for this program, specifically:

**Level 1 - High Importance**

- **Proximity to Injured Resources:** As stated, the J-Ranges are solely located within the Town of Sandwich. The proposed Comprehensive Water Resources Management Plan directly affects groundwater resources in Sandwich, as well as in neighboring towns of Falmouth, Mashpee, and Barnstable.
- **Relationship to the Injured Resource:** Sandwich's proposed Comprehensive Water Resources Management Plan will protect all of the town's groundwater resources, including the groundwater impacted by the plume. The J-Ranges sit on top of the Upper Cape Cod's sole source aquifer, which is one of the principal resources that the Comprehensive Water Resources Management Plan will protect.
- **Magnitude of Benefits:** While the J-3 Range plume has been estimated at 94 acres, the proposed Comprehensive Water Resources Management Plan will benefit the entire town of Sandwich (approximately 28,000 acres), as well as its neighboring communities. As discussed in Section 1.3.2, there are a number of pressing requirements that make the proposed plan vital to the groundwater and surface water bodies of Upper Cape Cod.
- **Natural Recovery:** The Comprehensive Water Resources Management Plan will identify measures to prevent groundwater contamination as well as address ways to enhance natural recovery rates for plumes such as the one emanating from the J-range. The comprehensive nature of the plan allows an integrated mix of protection and restoration as necessary to optimize the overall town water resources.
- **Sustainability of Benefits:** By design, a Comprehensive Water Resources Management Plan will change behaviors and affect how the community approaches its water resources not only now, but into the future. It represents a "sea change" in thinking and behavior. Through proper comprehensive planning, the positive impact on natural resources will be felt well beyond the time the plume in question has been "cleaned-up" and forgotten.
- **Consistency with MA Water Policies and Plans:** A Comprehensive Water Resources Management Plan is the tool with which the community can promote the principles of the

Massachusetts Water Policy (see Section 1.3.1). It will be developed in full compliance with DEP's Guidance for Water Resource Management Planning.

- **Stewardship:** As the Town envisions the Comprehensive Water Resources Management Plan (See Appendix B for specific tasks), public involvement and education will be paramount through volunteer committees, workshops, and informative meetings. In addition, public education and potential modification of existing habits will likely be essential components of the remedies identified in the plan. These changes can have a long-lasting effect on how the public views its natural resources. Finally, the process of creating a Comprehensive Water Resources Management Plan will be subject to the Massachusetts Environmental Policy Act (MEPA) which broadens the public input through a thorough, well-proven method.
- **Technical/Technology:** Phase II of the Comprehensive Water Resources Management Plan is the "Identification, Screening and Evaluation of Alternatives". In this stage, after the community's needs have been determined, a detailed assessment of all potential alternatives will be made, then screened and ranked, followed by the community selecting the best approaches for its needs. It has been demonstrated that this process properly focuses the community on well-established alternatives with a high probability of success.
- **Relationship of Expected Costs to Expected Benefits:** The costs of the Comprehensive Water Resources Management Plan (estimated at $600,000) will be insignificant compared to the benefits that generations of Upper Cape Codders will experience in health and commerce due to having safe and bountiful drinking water, pristine water bodies, and protected natural resources. These benefits will only be possible through proper management of the resources, and well-thought-out implementation projects, that the Comprehensive Water Resources Management Plan will enable.
- **Implementation-oriented:** Though a Comprehensive Water Resources Management Plan "does not put shovel to earth" it is the keystone in recognizing and selecting the appropriate implementation projects to do that. In addition, it will enable the implementation of growth management/development strategies that will directly affect the water resources of Sandwich and the surrounding communities. Finally, through community education the plan directly influences the behaviors of individuals which will also have broad reaching, direct, impacts on the water resources of the area.
- **Leveraging Additional Resources:** Specific local in-kind contributions to this project are identified in Section 2. In addition, Sandwich is located in the upper reaches of several watersheds that it shares with the communities of Mashpee, Barnstable, and Falmouth (see Section 1.3.2). These communities have begun their Comprehensive Water Resources Management Plans, and Sandwich now needs to implement its own plan to allow a comprehensive decision on the best approach to protect these water resources. As a result, Sandwich's Comprehensive Water Resources Management Plan leverages these communities to complete their own protective measures. Finally, Sandwich has been approached to be a participant in a possible regional wastewater treatment facility with the Towns of Bourne, Falmouth, and Mashpee. Having a true understanding of its water resources needs will allow the Town to fully participate in regionalization studies.

**Level 2 - Medium Importance**

- **Multiple Benefits:** As noted above, a Comprehensive Water Resources Management Plan will benefit the full gamut of water resources, from groundwater, to freshwater ponds and coastal embayments. In addition, it will benefit not only Sandwich, but the surrounding communities of Bourne, Falmouth, Mashpee, and Barnstable, through either completing work on shared watersheds, or through enabling a potential regional solution to water resource needs.
- **Avoidances of Adverse Environmental Impacts:** By definition, a Comprehensive Water Resources Management Plan seeks to avoid adverse environmental impacts through the proper management of the water resources in the area. In addition, the plan is subject to the Massachusetts Environmental Policy Act (MEPA), which will ensure that there are no unrecognized adverse impact from the plan.
- **Community Goals:** In addition to protecting the natural resources that are essential to the viability and character of the community, other town priorities will also be addressed with the Comprehensive Water Resources Management Plan. Some of the biggest problems facing the Town relate to the high residential growth rate and the general lack of commercial and industrial development. This has led to an unbalanced tax structure. This is partly due to the lack of public wastewater infrastructure in the commercial zones. Lands already zoned commercial or industrial mostly fall within water recharge areas for present and future town wells. The Town is completing its Local Comprehensive Plan (LCP), but needs the Comprehensive Water Resources Management Plan to work in concert with the LCP to identify the best innovative solutions that will protect its water resources while still allowing intelligent growth.
- **Avoidances of Adverse Human Impacts:** The proposed Comprehensive Water Resources Management Plan will have no adverse human health or socioeconomic impacts. In fact, it should provide positive benefits to both.
- **Measurable Results:** The proposed Comprehensive Water Resources Management Plan, and its subsequent implementation projects, will produce a measurable benefit to Sandwich and Upper Cape Cod. Through the first phase of the plan ("Needs Assessment" see Table 1-1), a baseline will be established for many of the various water resources in the area. The proposed solutions indentified in Phase II and formalized and documented in Phase III will provide solutions to identified issues and the results from these solutions will be measured against the identified baseline.
- **Level of Difficulty:** Though the proposed Comprehensive Water Resources Management Plan is detailed, and will take time, it is a well-established planning tool. With an experienced team assisting the community, the process should not be onerous or encounter insurmountable obstacles that would prevent its successful completion.

### 1.4.4. Other Considerations

The nine considerations enumerated on page 11 of the RFP are addressed as follows:

- **Entities That Will Perform the Work:** The Town will use the NRD monies to hire an experienced environmental consultant to lead the technical aspects of the Comprehensive Water Resources Management Plan process. The consultant will be selected through a competitive procurement process. The selection will be based on the qualifications and experience of the firm in completing similar plans on Cape Cod, costs, and the ability to fairly represent the Town in its discussions with the surrounding communities regarding shared watersheds and resources. The selection process will conform to Town and State requirements.

  Once a consultant has been retained, workshops will be held with the Town and consultant to identify the most cost-effective way to accomplish the tasks identified in Section 1.4.1, and Appendix B. It is the Town's intention to accomplish as much of the work itself as possible through the use of volunteer committees and town staff (given the constraints of their time). However, it is acknowledged that the bulk of the work will be performed by the engineering consultant.

  The Town intends that the process will be transparent, utilizing the Town's web site and local access television to keep the public informed of the plan's progress, milestones, and outcomes.

- **How the Project Will Be Conducted:** The project will be completed in conformance with the DEP document "Water Resource Management Planning; a Guide for Towns and Communities".

- **Activities to Be Completed Prior to Project Implementation:** There are no permitting activities that must be completed prior to beginning the Comprehensive Water Resources Management Plan. All planning, design and permitting activities needed for the long-term implementation of the Plan's recommendations will be fully identified and described in the Plan.

- **Required Property Access Agreements:** No property access agreements are required to complete the Comprehensive Water Resources Management Plan.

- **Potential Short-Term and Long-Term Impacts:** One of the key goals of the proposed Comprehensive Water Resources Management Plan is to identify and maximize the activities that result in beneficial impacts on the town's groundwater resources. At the same time, the Plan will identify potential negative impacts of current land use and waste disposal practices and lay out an approach to eliminate or minimize them.

- **Measures to Ensure Long-Term Effectiveness:** As part of the Comprehensive Water Resources Management Plan, a broad range of alternatives will be evaluated to improve groundwater quality town-wide. Each alternative will be evaluated against many criteria, including long-term sustainability. This factor will be important in the selection of the best alternatives, and measures to ensure long-term effectiveness will be added to each component of the recommended plan.

- **Monitoring and Evaluation Plan:** The preparation of Sandwich's Comprehensive Water Resources Management Plan will be periodically reviewed by the staff of the Cape Cod Commission and DEP, and those agencies will be the lead reviewers of the reports prepared at the end of each project phase. These reviews provide good quality control because the reviewers are knowledgeable in the overall planning process, as well as the successful features of other Comprehensive Water Resources Management Plan s that have been completed on Cape Cod.

- **Coordination with Other Restoration Activities:** One of the fundamental reasons for completing a Comprehensive Water Resources Management Plan is the need to have a systematic town-wide approach to groundwater management. This Plan will be the single comprehensive document that facilitates and coordinates **all** groundwater protection and restoration activities in Sandwich.

- **Complementary Nature to Existing Plans:** There is no existing groundwater management plan in place. The proposed Sandwich Comprehensive Water Resources Management Plan will form the framework needed to ensure that all subsequent protection and restoration activities are complementary and synergistic. It will serve as a resource document for the Local Comprehensive Plan.

# SECTION 2

# BUDGET NARRATIVE

## 2.1 OVERALL BUDGET

The Town of Sandwich intends to draw on three resources to develop the Comprehensive Water Resources Management Plan: this NRD grant, the time of town staff, and the time of citizen volunteers. No grant funds will go toward town salaries. The NRD Fund monies will be used to retain the services of an experienced consultant to provide the technical input for the plan. Given the current economic climate, the requested monies are absolutely essential for the Town to be able to undertake this effort. With projected budget deficits near a million dollars in FY10 and perhaps several million dollars in later years, and cuts in services and layoffs being considered, it will be impossible for Sandwich to undertake this effort without the EEA support.

Initial estimates of the costs of a consultant to assist the Town in developing a Comprehensive Water Resources Management Plan are summarized in Table 2-1.

**TABLE 2-1**
**COST ESTIMATE BY PRINCIPAL PROJECT PHASE**

| Phase | Description | Budgetary Costs |
|---|---|---|
| I | Needs Assessment | $225,000 |
| II | Identification, Screening and Evaluation of Alternatives | $175,000 |
| III | Formulation of Recommended Plan | $110,000 |
| IV | Completion of MEPA and DRI Reviews | $ 90,000 |
| | **TOTAL RECOMMENDED BUDGET:** | $600,000 |

These costs were derived from estimates of labor and non-labor cost for each task (as defined by Appendix B) within the four principal phases. The estimates were then compared with the overall costs expended by neighboring Cape Cod communities on similar projects. These comparable projects in Chatham, Falmouth, Mashpee, Harwich and Orleans have actual or projected costs ranging from $450,000 to over $1,000,000. The budget for Sandwich reflects known differences in scope from other towns, as well as inflationary cost adjustments and expected streamlining of effort where appropriate.

## 2.2 ASSUMPTIONS

The budget summarized in Table 2-1 is based on a number of assumptions, including:

- The costs for Town staff time will be covered by the Town and not come from grant monies.
- Volunteer committees will be used primarily in data collection and public workshops. The consultant will provide guidance and direction to these committees.

- An active dialog and negotiations will be needed with surrounding communities, DEP and watershed groups to arrive at Sandwich's share of responsibility for nitrogen-based TMDLs for shared watershed of impaired coastal waters.
- The consultant will represent the Town in detailed discussions regarding potential regionalization of wastewater treatment services.

## 2.3 CONTRACTED SERVICES

NRD grant funds will be used to hire a consultant to help the Town develop its Comprehensive Water Resources Management Plan. The consultant will be selected through a competitive procurement process based on the qualifications and experience of the firm, proposed costs, and the ability to fairly - and without conflict of interest - represent the Town in discussions with the surrounding communities concerning shared water resources. The selection process will conform to Town and State requirements. Since the Consultant selection process will not be complete until after the Town has secured funding, the wage rates for the contracted services cannot be firmly established until after the grant has been awarded. The Town will submit these rates to the EEA at that time. The services provided by the consultant are as identified in Section 1.4.1 and Appendix B.

## 2.4 SANDWICH'S IN-KIND MATCHES

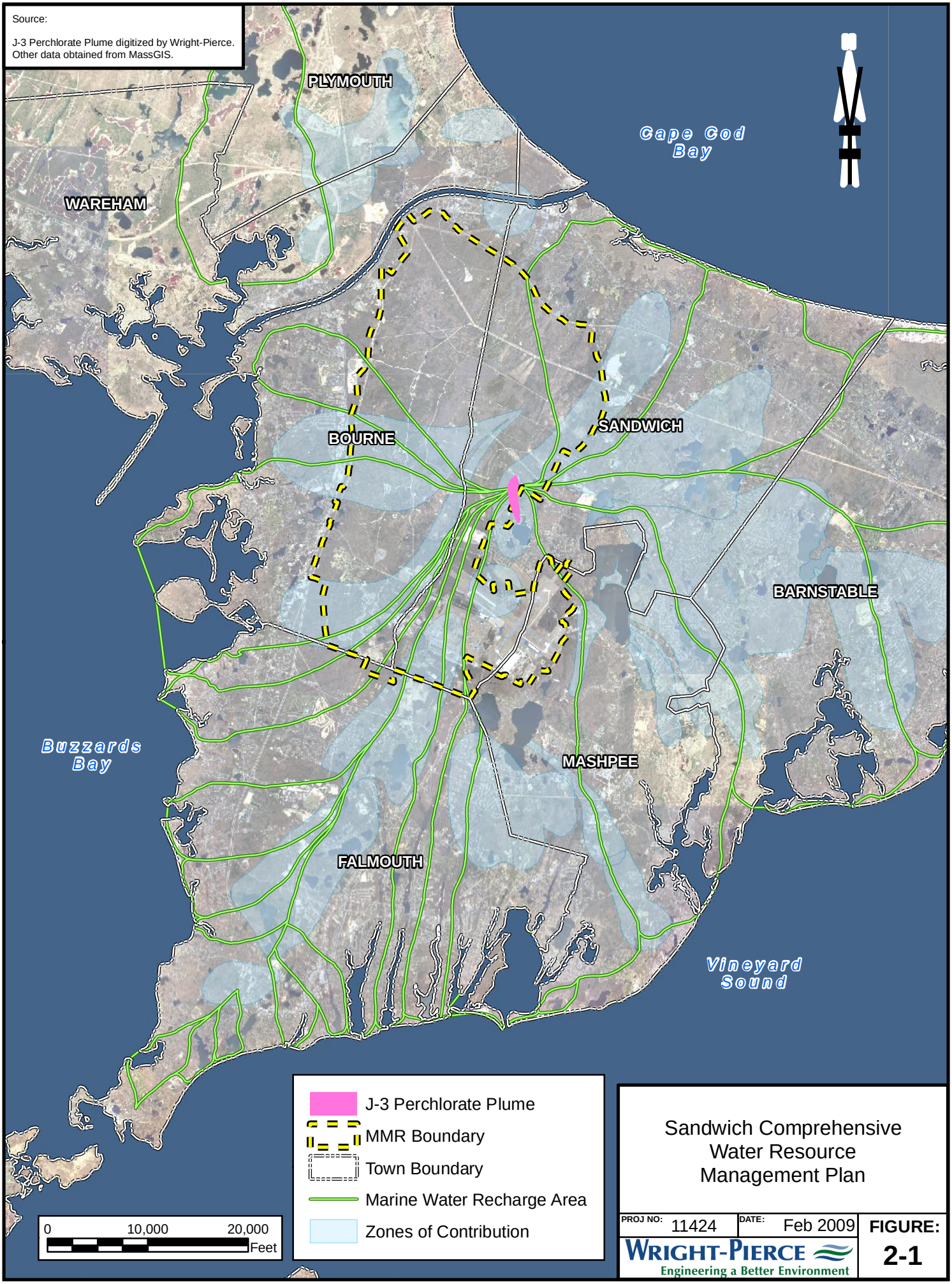
The Town is committed to the success of the project, and intends to contribute in many ways through in-kind matches of services and the use of volunteer committees to help reduce the costs of the plan. Table 2-2 summarizes the expected Town contributions and the resulting savings compared with the use of a consultant to complete these efforts. A detailed breakout of these contributions can be found in Appendix C.

**TABLE 2-2**
**ESTIMATED IN-KIND MATCHES BY THE TOWN**

| Town Contributions and Staff Involvement | Estimated Hours | Estimated Costs/Savings[1] |
|---|---|---|
| Maintenance cost resulting from the taking of private roads to support monitoring wells for J-Range | N/A | $16,500/year |
| Town/Health Department | 190 | $20,900 |
| Town/Water District | 20 | $2,200 |
| Town/Planning Department | 184 | $20,240 |
| Volunteers | 520 | $31,200 |
| Town Boards | 120 | $13,200 |
| **TOTALS:** | 1,034 | $137,240 [2] |

Notes: 1. Savings are based on comparable engineering firm employee rates to accomplish the same tasks.
2. Assumes only three years of road maintenance (duration of the CWRMP). In reality these costs will continue annually for the foreseeable future.

# APPENDIX A
## Site Map




# Sandwich Comprehensive Water Resource Management Plan

| PROJ NO: | DATE: | FIGURE: |
|---|---|---|
| 11424 | Feb 2009 | 2-1 |

WRIGHT-PIERCE
Engineering a Better Environment

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# APPENDIX B
## Principal Phases/Individual Task List

**Sandwich, Massachusetts**
**Comprehensive Water Resources Management Plan**

**Principal Phases and Individual Tasks**

| | |
|---|---|
| **PHASE 1 - NEEDS ASSESSMENT** | |
| **Tasks** | |
| **1.1** | **Describe Existing Conditions** |
| | |
| 1.1.1 | Describe existing wastewater treatment systems in Town and associated disposal conditions |
| 1.1.1.1 | Public Systems - Schools |
| 1.1.1.2 | Private Systems |
| 1.1.1.3 | On-site Systems |
| | |
| 1.1.2 | Compile available base mapping (GIS) |
| | |
| 1.1.3 | Describe current land use |
| | |
| 1.1.4 | Describe groundwater flows and quality |
| 1.1.4.1 | MMR plumes |
| 1.1.4.2 | Water District monitoring |
| 1.1.4.3 | Other |
| | |
| 1.1.5 | Describe existing geologic and soil conditions |
| | |
| 1.1.6 | Describe and summarize data on public/private water supplies |
| | |
| 1.1.7 | Describe environmentally sensitive areas |
| 1.1.7.1 | Zones of contribution. |
| 1.1.7.2 | Ponds. |
| 1.1.7.3 | Embayments. |
| 1.1.7.4 | Protected areas. |
| | |
| 1.1.8 | Identify sensitive species in these areas |
| | |
| 1.1.9 | Describe the state and federal regulatory constraints |
| | |
| 1.1.10 | Compile data on water sources, consumption, and existing wastewater volumes |
| | |
| 1.1.11 | Identify known existing wastewater problem areas as to number of properties and flow |
| | Sanitary needs |
| | Protection of water supplies |
| | Protection of surface waters from nutrient overloading |
| | Providing for sustainable economic growth |
| | Mitigating aesthetic, convenience and economic problems |
| | |
| 1.1.12 | Identify other known existing water quality problem areas |
| | |
| **1.2** | **Review MEP Water Quality Reports and DEP TMDL's** |
| | |
| 1.2.1 | Sandwich Harbor |
| | |
| 1.2.2 | Scorton Creek |
| | |
| 1.2.3 | Popponesset Bay |
| | |
| 1.2.4 | Three Bays |
| | |
| 1.2.5 | Waquoit Bay |
| | |
| **1.3** | **Negotiate Sandwich's Share of Regional TMDLs** |
| | |
| 1.3.1 | Popponesset Bay |
| | |
| 1.3.2 | Three Bays |
| | |
| 1.3.3 | Waquoit Bay |
| | |
| **1.4** | **Estimate Future Wastewater Needs** |

| | |
|---|---|
| | |
| **1.6** | **Create The Needs Assessment Report** |
| | |
| 1.6.1 | Prepare Draft Needs Assessment Report |
| | |
| 1.6.2 | Submit to the Town for review and comment |
| | |
| 1.6.3 | Update Draft Needs Assessment Report |
| | |
| 1.6.4 | Conduct Public Meeting, solicit feedback |
| | |
| 1.6.5 | Meet with DEP and Cape Cod Commission |
| | |
| 1.6.6 | Address public, DEP and CCC comments |
| | |
| 1.6.7 | Print and distribute updated Draft Needs Assessment Report |
| | |

| PHASE 2 - IDENTIFICATION AND EVALUATION OF ALTERNATIVES | |
|---|---|
| **Tasks** | |
| **2.1** | **Identification and Development of Alternatives** |
| | |
| 2.1.1 | Develop on-site treatment and disposal alternatives |
| | |
| 2.1.2 | Develop decentralized treatment and disposal alternatives |
| | |
| 2.1.3 | Develop centralized treatment and disposal alternatives |
| | |
| 2.1.4 | Develop regional treatment and disposal alternatives |
| | |
| 2.1.5 | Develop conservation and flow/load reduction measures |
| | |
| 2.1.6 | Develop alternatives involving non-traditional approaches |
| | |
| 2.1.7 | Identify alternative residuals disposal technologies |
| | |
| | |
| **2.2** | **Develop Evaluation Criteria** |
| | |
| 2.2.1 | Conduct workshop with Town to establish evaluation criteria |
| | |
| 2.2.2 | Develop an evaluation matrix screening methodology |
| | |
| **2.3** | **Screening of Alternatives** |
| | |
| 2.3.1 | Screen alternatives against established criteria |
| | |
| 2.3.2 | Select top three alternatives for further consideration |
| | |
| 2.3.3 | Perform detailed evaluation of top three screened alternatives |
| 2.3.3.1 | Develop layouts and quantities |
| 2.3.3.2 | Estimate capital and O&M costs |
| 2.3.3.3 | Prepare evaluation of environmental impacts |
| 2.3.3.4 | Estimate energy use |
| 2.3.3.5 | Address public acceptability, regulatory acceptability, etc. |
| | |
| **2.4** | **Create the Alternatives Evaluation Report** |
| | |
| 2.4.1 | Prepare Draft Alternatives Evaluation Report |
| | |
| 2.4.2 | Submit to the Town for review and comment |
| | |
| 2.4.3 | Update Draft Alternatives Evaluation Report |
| | |
| 2.4.4 | Conduct Public Meeting, solicit feedback |
| | |
| 2.4.5 | Meet with DEP and Cape Cod Commission |
| | |
| 2.4.6 | Address public, DEP and Commission comments |
| | |
| 2.4.7 | Prepare final Alternatives Evaluation Report |
| | |
| | |

| PHASE 3 - FORMULATE PLAN AND CREATE FINAL CWRMP REPORT | |
|---|---|
| **Tasks** | |
| **3.1** | **Select Recommended Plan** |
| | |
| 3.1.1 | Committee and Board Level Involvement |
| 3.1.1.1 | Workshops |
| | |
| 3.1.2 | Public Involvement |
| 3.1.2.1 | Workshops |
| | |
| 3.1.3 | Meet with DEP and the CCC |
| | |
| 3.1.4 | Summarize comments, findings and discussion points |
| | |
| 3.1.5 | Select Recommended Plan |
| | |
| **3.2** | **Develop Recommended Plan** |
| | |
| 3.2.1 | Prepare detailed description of recommended plan |
| | |
| 3.2.2 | Describe additional recommended Town facilities |
| | |
| 3.2.3 | Describe recommended modifications to local regulations |
| | |
| 3.2.4 | Develop project implementation schedule |
| | |
| 3.2.5 | Prepare permitting and approval plan |
| | |
| 3.2.6 | Prepare summary of environmental impacts |
| | |
| 3.2.7 | Prepare project financing and funding plan |
| | |
| **3.3** | **Create the final CWRMP Report** |
| | |
| 3.3.1 | Prepare Draft CWRMP |
| | |
| 3.3.2 | Meet with Town, DEP, and CCC for final review and comment |
| | |
| 3.3.3 | Prepare updated draft CWRMP |
| | |
| 3.3.4 | Conduct public heating |
| | |
| 3.3.5 | Address final comments |
| | |
| 3.3.6 | Print and distribute final CWRMP |
| | |

| PHASE 4 - MEPA and DRI FILINGS | |
|---|---|
| **Tasks** | |
| **4.1** | **Preparation of Environmental Notification Form (ENF)** |
| | |
| 4.1.1 | Prepare and submit ENF |
| | |
| 4.1.2 | Attend joint MEPA/DRI scoping session |
| | |
| 4.1.3 | Review EOEEA Secretary's certificate on the ENF |
| | |
| **4.2** | **File DRI application with Cape Cod Commission** |
| | |
| **4.3** | **Prepare Environmental Impact Report (EIR)** |
| | |
| 4.3.1 | Prepare Draft EIR |
| | |
| 4.3.2 | Joint MEPA/DRI public hearing on the DEIR |
| | |
| 4.3.3 | Review EOEEA Secretary's certificate on the DEIR |
| | |
| 4.3.4 | Prepare the final EIR |
| | |
| 4.3.5 | Review EOEEA secretary's certificate on the EIR |
| | |
| 4.3.6 | Formulate plan to address on-going MEPA and CCC requirements |
| | |

# APPENDIX C
## Estimate of Time Contributions

**Sandwich CWRMP**

**Estimate of Time Contributions from Town Staff and Citizen Volunteers**

| Task | Task Description | Individual | Number | Each | Hours | Equivalent Engineering Firm Hourly Costs | Cost Savings |
|---|---|---|---|---|---|---|---|
| 1.1.2 | Compile base maps | Town--Planning | 1 | 24 | 24 | $110 | $2,640 |
| 1.1.4 | Compile public water quality data | Town/Water Dist. | 1 | 8 | 8 | $110 | $880 |
| 1.1.6 | Compile private water quality data | Town--Health | 1 | 8 | 8 | $110 | $880 |
| 1.1.10 | Compile water consumption data | Town/Water Dist. | 1 | 8 | 8 | $110 | $880 |
| | | Town--Health | 1 | 12 | 12 | $110 | $1,320 |
| | | Town--Planning | 1 | 24 | 24 | $110 | $2,640 |
| 1.1.11 | Needs assessment--sanitary | Town--Health | 1 | 12 | 12 | $110 | $1,320 |
| | | Volunteers--BOH | 2 | 32 | 64 | $60 | $3,840 |
| | Needs assessment--water supply | Town/Water Dist. | 1 | 4 | 4 | $110 | $440 |
| | Needs assessment--aesthetic | Volunteers--BOH | 2 | 12 | 24 | $60 | $1,440 |
| 1.2 | Review MEP technical reports | Town--Planning | 1 | 40 | 40 | $110 | $4,400 |
| | | Town--Health | 1 | 40 | 40 | $110 | $4,400 |
| 1.4.1 | Coordinate with LCP | Town--Planning | 1 | 8 | 8 | $110 | $880 |
| 1.4.2 | Review population trends | Town--Planning | 1 | 12 | 12 | $110 | $1,320 |
| 1.4.6 | Estimate future needs | Town--Planning | 1 | 8 | 8 | $110 | $880 |
| | | Town--Health | 1 | 16 | 16 | $110 | $1,760 |
| 1.5.4 | Public input--Needs Assessment | Volunteers--CAC | 6 | 24 | 144 | $60 | $8,640 |
| Phase 1 | Project meetings--Phase 1 | Town--Health | 8 | 4 | 32 | $110 | $3,520 |
| | | Town--Planning | 6 | 4 | 24 | $110 | $2,640 |
| 2.2.1 | Establish screening criteria | Town--Health | 1 | 6 | 6 | $110 | $660 |
| 2.2.4 | Public input--Alt. Screening | Volunteers--CAC | 6 | 24 | 144 | $60 | $8,640 |
| Phase 2 | Project meetings--Phase 2 | Town--Health | 6 | 4 | 24 | $110 | $2,640 |
| | | Town--Planning | 4 | 4 | 16 | $110 | $1,760 |
| 3.1.1 | Committee/board input | Town boards | 15 | 8 | 120 | $110 | $13,200 |
| 3.1.2 | Public input--Plan Selection | Volunteers--CAC | 6 | 24 | 144 | $60 | $8,640 |
| Phase 3 | Project meetings--Phase 3 | Town--Health | 6 | 4 | 24 | $110 | $2,640 |
| | | Town--Planning | 4 | 4 | 16 | $110 | $1,760 |
| Phase 4 | Project meetings--Phase 4 | Town--Health | 4 | 4 | 16 | $110 | $1,760 |
| | | Town--Planning | 3 | 4 | 12 | $110 | $1,320 |
| | | | | **TOTAL:** | **1,034** | **TOTAL:** | **$87,740** |

| **Breakout By Staff Function** | | | |
|---|---|---|---|
| **Staff** | **Hours** | **Equivalent Rate** | **Savings** |
| Town--Health | 190 | 110 | $20,900 |
| Town/Water Dist. | 20 | 110 | $2,200 |
| Town--Planning | 184 | 110 | $20,240 |
| Volunteers | 520 | 60 | $31,200 |
| Town Boards | 120 | 110 | $13,200 |
| **TOTAL:** | **1034** | **TOTAL:** | **$87,740** |

# APPENDIX D
## Project Proposal Form

## Natural Resource Damages Fund
## Groundwater Restoration Projects
## Textron Systems Corporation/Mass Military Reservation Superfund Site

# Project Proposal Form

### APPLICANT AND PROJECT INFORMATION.

**Type of Entity** Check the box that best describes the applicant.

[ ] Private individual
[ ] Non-profit organization
[ ] State government
[ ] Federal government
[ ] Tribal government
[X] Municipal government
[ ] Corporation or Business
[ ] County government
[ ] Academic Institution
[ ] Other (explain)

**Authorized Representative of Applicant**

David Mason
Name

Health Agent
Title

16 Jan Sebastian Drive
Address

Address

Sandwich MA 02563
City State Zip

Phone: (508) 888-4200

Email: dmason@townofsandwich.net

**Contact Person** (if different)

Name

Title

Address

Address

City State Zip

Phone:

Email:

**Project Name** Provide a brief working name:

Development of Comprehensive Water Resource Management Plan

**Project Location**

Attach an 8.5 x 11-inch map or copy of an aerial photograph showing project location and extent. Include pertinent topographic and geographic information, a scale, and north arrow.

State(s), Municipality/ies: Sandwich, MA

**Restoration Priority Categories**

Check all relevant boxes.

[X] Protect quality of current drinking water supply
[X] Protect quantity of current drinking water supply
[X] Protect quality of potential drinking water supply
[X] Protect quantity of potential drinking water supply
[X] Offset to mitigate impacts to water-dependent ecosystems

**List Specific Injured Natural Resources and/or Impaired Natural Resource Services to Benefit from Project**

All water resources within the Town of Sandwich, including:

- Groundwater (quanity and quality)
- Freshwater ponds
- Salt marshes and embayments

In addition, due to shared watersheds, it will also affect the groundwater, ponds and embayments in the Towns of Mashpee, Falmouth, and Barnstable. Finally, as the plan will allow the Town to understand its water resources, and particularly its wastewater needs, it will allow the Town to enter into serious conversations with the towns of Falmouth, Bourne, and Mashpee regarding regional wastewater treatment.

**Project Type** Check all relevant boxes.

[X] Aquifer protection
[X] Aquifer recharge
[ ] Protection of environmentally sensitive lands or critical habitats
[X] Water conservation
[X] Integrated water and wastewater management

# APPENDIX E
## Budget Application Forms

## TEXTRON/MMR NRD FUNDING ALLOCATION BY FISCAL YEARS [1]

| | |
|---|---|
| **PROJECT TITLE:** | **Town of Sandwich, Comprehensive Water Resources Management Plan** |
| **APPLICANT NAME:** | **Town of Sandwich, Water Quality Advisory Committee** |

| EXPENSE CATEGORY | FISCAL YEAR 1 | FISCAL YEAR 2 | FISCAL YEAR 3 | FISCAL YEAR 4 |
|---|---|---|---|---|
| | Textron/MMR NRD Funds | Textron/MMR NRD Funds | Textron/MMR NRD Funds | Textron/MMR NRD Funds |
| A. SALARIES | | | | |
| B. EMPLOYEE BENEFITS | | | | |
| C. CONTRACTED SERVICES | $200,000 | $310,000 | $90,000 | |
| D. SUPPLIES, MATERIALS AND EQUIPMENT | | | | |
| E. TRAVEL | | | | |
| F. OTHER (LIST) | | | | |
| G. OTHER (LIST) | | | | |
| **TOTAL BY FISCAL YEAR** | **1** $200,000 | **2** $310,000 | **3** $90,000 | **4** - |
| **GRAND TOTAL (sum of boxes 1+2+3+4)** [This sum is the total NRD fund request] | | | $600,000 | |

[1] The fiscal year is July 1 – June 30. If the proposed project will be completed in one year, fill in only the column titled "Fiscal Year 1."

## TEXTRON/MMR NRD PROJECT BUDGET SUMMARY BY TASK AND FUNDING SOURCE

| | |
|---|---|
| **PROJECT TITLE:** | **Town of Sandwich, Comprehensive Water Resources Management Plan** |
| **APPLICANT NAME:** | **Town of Sandwich, Water Quality Advisory Committee** |

| **TASK**[2] | **TEXTRON/MMR NRD FUNDS** | **OTHER CONTRIBUTIONS** | | **TOTAL COST BY TASK** |
|---|---|---|---|---|
| | | **COMMITTED** | **NOT COMMITTED** | |
| A. Needs Assessment | $225,000 | | | $225,000 |
| B. Identification and Evaluation of Alternatives | $175,000 | | | $175,000 |
| C. Select, Develop, and Formalize Plan | $110,000 | | | $110,000 |
| D. Environmental Notification and Form Filing | $90,000 | | | $90,000 |
| E. | | | | |
| F. | | | | |
| G. | | | | |
| **TOTAL BY FUNDING SOURCE** | **5** $600,000 | **6** | **7** | **8** **GRAND TOTAL** $600,000 |

[2] The listed tasks should correspond with information provided in the Project Narrative.

# APPENDIX F
## Letter to EOEEA regarding Textron Funding

# Town Of Sandwich
**THE OLDEST TOWN ON CAPE COD**

**E-mail:health@townofsandwich.net**

# WQAC
**16 Jan Sebastian Drive**
**Sandwich, MA 02563**
**PHONE:(508) 888-4200**
**FAX: (508) 833-0018**


August 21, 2008

Ms. Dale Young
EOEEA
100 Cambridge Street
Suite 900
Boston, MA 02114

RE: NRD Settlement @ MMR with TEXTRON

Dear Ms. Young,

I would like to introduce you to the Sandwich Water Quality Advisory Committee (WQAC). The WQAC is responsible for addressing the protection of the Estuaries, its watersheds and groundwater within the bounds of the Town of Sandwich. The WQAC is pleased to have learned of the recent $1.3 Million dollar settlement with TEXTRON. As you are aware, TEXTRON is the entity found guilty in the negligent contamination of the groundwater supply of the Upper Cape and more specifically the Town of Sandwich.

With interest in the settlement, Representatives of the Sandwich WQAC attended the Massachusetts Military Reservation Senior Management Board meeting of March 26, 2008 to listen to your presentation and to obtain information regarding the settlement and the potential uses of this money.

You may not be aware, but the Town of Sandwich overturned a longstanding moratorium on private road takings to allow access for monitoring well placement. This decision was made at Town Meeting to assist in the placement of monitoring wells, which is directly related to the TEXTRON contamination. Due to the Town of Sandwich supporting the need to address this TEXTRON contamination, the Town of Sandwich has incurred a long-term expense for the upgrade and maintenance of these previously private roads.

The Sandwich WQAC is in the process of collaborating with abutting communities to address the nutrient loading associated with estuaries in the communities of Mashpee, Barnstable and Falmouth. The up-gradient watersheds of these estuaries in these abutting towns originate in Sandwich. The Sandwich WQAC is interested in obtaining $300,000.00 of the TEXTRON settlement funds for the purpose of this work, which is mandated by the Massachusetts Estuaries Program (MEP) and the Clean Water Act.

The Sandwich WQAC would be interested in obtaining these funds by September 30, 2008. As you are aware, there is a crisis in municipal financing. This money allows the continuation of the MEP with our abutting communities and since the MEP is beneficial to all citizens of the Commonwealth it is imperative that this work continues. The burden of funding this has been placed on each individual town and currently the Town of Sandwich is unable to fund this program.

The WQAC requests information on the process to access the settlement fund. You may contact David B. Mason, Director of Public Health, Town of Sandwich, 508-888-4200 with the requested information.

Thank you in anticipation of your assistance.

Sincerely,

Sean P. Grady
Chairman, Sandwich Water Quality Advisory Committee

Cc: Mr. Jeffrey Davis Perry, State Representative, 5th Barnstable District
Ms. Therese Murray, Senate President, Plymouth and Barnstable
Sandwich Board of Selectmen
Sandwich Water Quality Advisory Committee
Mr. George Zoto, Bureau of Resource Protection, Massachusetts DEP
Mr. Brian Dudley, Wastewater Management, Massachusetts DEP

# APPENDIX G
## Letters of Support


TOWN OF SANDWICH
INCORPORATED
1639
POST TOT
PORTUS
NAUFRACIA
MASSACHUSETTS